

WHAT IS CLAIMED IS:

1. A system for ensuring originality of electronic data comprising:

5 a third party apparatus which receives a first digital signature for said electronic data to return an originality ensuring digital signature generated for a set of said first digital signature and first date information to a transmission origin of said first digital signature and receives an undeniable digital signature for said first digital signature to save this  
10 undeniable digital signature as a set together with said first digital signature and said originality ensuring digital signature;

15 a first entity apparatus which transmits said first digital signature to said third party apparatus and receives an originality ensuring digital signature from said third party apparatus to transmit a set of this originality ensuring digital signature, said electronic data, and said first digital signature; and

20 a second entity apparatus which receives a set of said originality ensuring digital signature, said electronic data, and said first digital signature from said first entity apparatus, verifies said electronic data based on said originality ensuring digital  
25 signature and said first digital signature, and when a verification result is valid, transmits an undeniable digital signature generated for a set of said first

digital signature and second date information to said third party apparatus.

2. The system according to claim 1, wherein said third party apparatus generates a second digital signature based on a third date information and returns reception confirmation including said second digital signature to the second entity apparatus, when said undeniable digital signature is saved.

3. A method using a third party apparatus for ensuring originality of electronic data comprising:

when said third party apparatus receives a first digital signature for said electronic data, generating an originality ensuring digital signature for a set of said first digital signature and first date information and returning said originality ensuring digital signature to a transmission origin of said first digital signature; and

when said third party apparatus receives an undeniable digital signature for said first digital signature, saving said undeniable digital signature as a set together with said first digital signature and said originality ensuring digital signature.

4. The method according to claim 3, wherein said third party apparatus generates a second digital signature based on a third date information and returns reception confirmation including said second digital signature to the second entity apparatus, when said

undeniable digital signature is saved.

5. A computer program relating to an originality ensuring system which applies an originality ensuring digital signature of a third party apparatus to a first digital signature provided to electronic data by a first entity apparatus and accordingly ensures originality of said electronic data for a second entity apparatus, said computer program stored in a computer-readable storage medium used for said third party apparatus comprising:

a first program code which receives an issuance request including said first digital signature from said first entity apparatus and generates said originality ensuring digital signature based on this issuance request;

a second program code which registers said generated originality ensuring digital signature in association with said first digital signature;

a third program code which transmits said registered originality ensuring digital signature to said first entity apparatus;

a fourth program code which receives a reception notification including an undeniable digital signature applied to said first digital signature from said second entity apparatus and registers this undeniable digital signature in association with said originality ensuring digital signature and said first digital

signature; and

a fifth program code which returns reception confirmation including identification information and said undeniable digital signature to a second entity apparatus in order to retrieve said registered undeniable digital signature, said originality ensuring digital signature, and said first digital signature.

6. The computer program according to claim 5, further comprising:

a sixth program code which generates a second digital signature based on a third date information when said undeniable digital signature is saved; and wherein said reception confirmation includes said second digital signature.

7. A computer program relating to an originality ensuring system which applies an originality ensuring digital signature of a third party apparatus to a first digital signature provided to electronic data by a first entity apparatus and accordingly ensures originality of said electronic data for a second entity apparatus, said computer program stored in a computer-readable storage medium used for said first entity apparatus comprising:

a first program code which creates electronic data according to an operator's operation;

a second program code which generates a first digital signature for electronic data subject to said

originality assurance;

a third program code which transmits said generated first digital signature to said third party apparatus; and

5 a fourth program code which receives an originality ensuring digital signature from said third party apparatus and transmits a set of this originality ensuring digital signature, said electronic data, and said first digital signature to said second entity  
10 apparatus.

8. A computer program relating to an originality ensuring system which applies an originality ensuring digital signature of a third party apparatus to a first digital signature provided to electronic data by a  
15 first entity apparatus and accordingly ensures originality of said electronic data for a second entity apparatus, said computer program stored in a computer-readable storage medium used for said second entity apparatus comprising:

20 a first program code which receives a set of said originality ensuring digital signature, said electronic data, and said first digital signature from said first entity apparatus and verifies said electronic data based on said originality ensuring digital signature  
25 and said first digital signature;

a second program code which generates an undeniable digital signature for a set of said first

digital signature and second date information when said verification result is valid; and

a third program code which transmits reception confirmation including said generated undeniable digital signature to said third party apparatus.

9. A computer program relating to a third party apparatus providing an originality ensuring portal service which registers a set of a first digital signature of a first entity apparatus for electronic data, an originality ensuring digital signature generated from this first digital signature and first date information, and an undeniable digital signature of a second entity apparatus for said first digital signature, and ensures originality of said electronic data, said computer program stored in a computer-readable storage medium used for said third party apparatus comprising:

a first program code which provides a preset first entity apparatus and second entity apparatus with an application program for using said originality ensuring portal service;

a second program code which confirms, when accessed by said application program, confirms an access privilege of said accessing first entity apparatus or second entity apparatus by referencing said setting; and

a third program code which permits the use of said

originality ensuring portal service for an entity apparatus having said access privilege confirmed.

10. The computer program according to claim 9, wherein

5           said application program comprises:

          a registration program code which generates and transmits said first digital signature to said third party apparatus and obtains said originality ensuring signature from said third party apparatus.

10           11. The computer program according to claim 10, wherein

          said registration program code comprises:

          a first program code which transmits said obtained originality ensuring digital signature, said generated first digital signature, and electronic data to a  
15           second entity apparatus, and at this time, requests said third party apparatus for a content of said setting as a transmission destination candidate; and

          a second program code which lists the content of  
20           said setting based on a response to said request.

12. The computer program according to claim 9, wherein

          said application program comprises:

          a reception confirmation program code which  
25           verifies validity of said electronic data based on received first digital signature, said electronic data, and said originality ensuring signature, and when a

verification result is valid, generates and transmits said undeniable digital signature to said third party apparatus.

13. The computer program according to claim 9,  
5 wherein

said application program comprises:

an originality confirmation program code which confirms a set of a first digital signature, an originality ensuring digital signature, and an  
10 undeniable digital signature registered to said third party apparatus.

14. A computer program stored in a computer-readable storage medium used for a third party apparatus managing a database which registers login  
15 information about respective entity apparatuses, said computer program comprising:

a first program code which, when a transmitting entity apparatus specifies a destination entity apparatus out of said respective entity apparatuses,  
20 references said database based on said specification; and

a second program code which provides said destination entity apparatus with login information about said transmitting entity apparatus as a result of  
25 said reference.

15. The computer program according to claim 14, wherein said login information is provided said



destination entity apparatus and said transmitting entity apparatus under said second program code.

16. A computer program relating to an originality ensuring system which applies an originality ensuring digital signature of a third party apparatus to a first digital signature provided to electronic data by a first entity apparatus and accordingly ensures originality of said electronic data for a second entity apparatus, said computer program stored in a computer-readable storage medium used for said third party apparatus managing a database for registering login information about respective entity apparatuses comprising:

a first program code which receives an issuance request including said first digital signature, receives specification of a destination second entity apparatus from said first entity apparatus, and then generates said originality ensuring digital signature based on said issuance request;

a second program code which registers said generated originality ensuring digital signature in association with said first digital signature;

a third program code which references said database based on said specification and provides said destination second entity apparatus with login information about the first entity apparatus;

a fourth program code which transmits said

registered originality ensuring digital signature and  
said provided login information to said first entity  
apparatus;

5 a fifth program code which receives a reception  
notification including an undeniable digital signature  
supplied to said first digital signature from said  
second entity apparatus and then registers this  
undeniable digital signature in association with said  
originality ensuring digital signature and said first  
10 digital signature; and

a sixth program code which returns to the second  
entity apparatus the reception confirmation including  
identification information and said undeniable digital  
signature for retrieving said registered undeniable  
15 digital signature, said originality ensuring digital  
signature, and said first digital signature.

17. The computer program according to claim 16,  
further comprising:

20 a seventh program code which generates a second  
digital signature based on a third date information  
when said undeniable digital signature is registered;  
and wherein said reception confirmation includes said  
second digital signature.

25 18. A computer program stored in a computer-  
readable storage medium used for respective entity  
apparatuses with respect to a third party apparatus  
which manages a database registering login information

about said respective entity apparatuses, said computer program comprising:

5 a first program code which is previously provided with login information about a transmitting entity apparatus from said third party apparatus and then saves this login information; and

10 a second program code which receives a login request from said transmitting entity apparatus and then performs login processing based on said login information.

15 19. A computer program relating to an originality ensuring system which has a third party apparatus managing a database registering login information about said respective entity apparatuses, supplies originality ensuring digital signature of said third party apparatus to a first digital signature supplied to electronic data by a first entity apparatus, and in this way ensures originality of said electronic data for a second entity apparatus,

20 said computer program stored in a computer-readable storage medium used for said second entity apparatus comprising:

25 a first program code which is previously provided with login information about a transmitting first entity apparatus from said third party apparatus and then saves this login information;

a second program code which receives a login

request and a set of said originality ensuring digital signature, electronic data, and first digital signature from said first entity apparatus and then performs login processing based on said login information;

5           a third program code which, upon completion of said login processing, verifies said electronic data based on said originality ensuring digital signature and said first digital signature said first entity apparatus;

10           a fourth program code which generates an undeniable digital signature for a set of said first digital signature and second date information when said verification result is valid; and

15           a fifth program code which transmits reception confirmation including said generated undeniable digital signature to said third party apparatus.

20. The computer program according to claim 19, further comprising:

20           a sixth program code which deletes said login information when said verification result is valid.

21. The computer program according to claim 19, further comprising:

          a seventh program code which updates said login information when said verification result is valid.

25           22. A computer program stored in a computer-readable storage medium used for said third party apparatus which provides an originality ensuring portal

service for registering a set of a first digital  
signature of a first entity apparatus for electronic  
data, an originality ensuring digital signature  
generated from this first digital signature and first  
5 date information, and an undeniable digital signature  
of a second entity apparatus for said first digital  
signature to ensure originality of said electronic data  
and manages a database registering login information  
about respective entity apparatuses including said  
10 first and second entity apparatuses, said computer  
program comprising:

a first program code which provides respective  
entity apparatuses previously registered to said  
database with an application program for using said  
15 originality ensuring portal service;

a second program code which confirms, when  
accessed by said application program, confirms an  
access privilege of said accessing first entity  
apparatus or second entity apparatus by referencing  
20 said setting;

a third program code which permits the use of said  
originality ensuring portal service for an entity  
apparatus having said access privilege confirmed;

a fourth program code which, when a transmitting  
25 first entity apparatus specifies a destination second  
entity apparatus out of said respective entity  
apparatuses, references said database based on said

specification; and

a fifth program code which provides said destination second entity apparatus with login information about said transmitting first entity apparatus as a result of said reference.

23. The computer program according to claim 22, wherein said login information is provided said destination entity apparatus and said transmitting entity apparatus under said fifth program code.

24. The computer program according to claim 22, wherein

said application program comprises:

a registration program code which generates and transmits said first digital signature to said third party apparatus and obtains said originality ensuring signature from said third party apparatus.

25. The computer program according to claim 24, wherein

said registration program code comprises:

a first program code which transmits said obtained originality ensuring digital signature, said generated first digital signature, and electronic data to a second entity apparatus, and at this time, requests said third party apparatus for a content of said setting as a transmission destination candidate; and

a second program code which lists the content of said setting based on a response to said request.

26. The computer program according to claim 22,  
wherein

said application program comprises:

5 a reception confirmation program code which  
verifies validity of said electronic data based on  
received first digital signature, said electronic data,  
and said originality ensuring signature, and when a  
verification result is valid, generates and transmits  
said undeniable digital signature to said third party  
10 apparatus.

27. The computer program according to claim 22,  
wherein

said application program comprises:

15 an originality confirmation program code which  
confirms a set of a first digital signature, an  
originality ensuring digital signature, and an  
undeniable digital signature registered to said third  
party apparatus.